

NEVADA DIVISION OF ENVIRONMENTAL PROTECTION

FACT SHEET

(pursuant to NAC 445A.236)

Permittee: Truckee Meadows Water Reclamation Facility
Cities of Reno and Sparks
P.O. Box 857
Sparks, Nevada 89432

Contact Entity: City of Sparks

Permit: NV0020150 - Renewal

Location: Truckee Meadows Water Reclamation Facility
8500 Clean Water Way
Reno, Washoe County, Nevada 89502
Latitude: 39° 31' 8.7? N; Longitude 119° 42' 10? W
Township 19 N, Range 20 E, Section 11 MDB&M

General: The Permittee has applied for a National Pollutant Discharge Elimination System (NPDES) permit renewal to extend the authorization to discharge tertiary treated domestic and industrial wastewater to the Truckee River via Steamboat Creek. The discharge point is approximately 0.1 mile upstream of the confluence of Steamboat Creek and the Truckee River. This facility serves the Cities of Reno and Sparks and portions of Washoe County.

The plant began operation in 1964. This permit was initially issued in December 1981 to the Reno-Sparks Joint Wastewater Treatment Facility for a permitted discharge of up to 30 million gallons per day (MGD). The facility, with a design treatment capacity of 44.0 MGD, is a biological nutrient removal plant that utilizes nitrification/denitrification for nitrogen removal and Pho-Strip for phosphorus removal. Treatment consists of bar screens, grit removal, primary sedimentation using clarifiers, activated sludge Pho-Strip to remove biochemical oxygen demand and phosphorus, secondary clarification, nitrification trickling filters, denitrification fluidized sand beds, post aeration, gravity sand/antracite filters, chlorination, and dechlorination with sodium bisulfite. This facility also includes a 4.4 million gallon flow equalization pond. Biosolids are anaerobically digested and centrifuged.

At the previous renewal, a mixing zone was included in the permit for temperature and un-ionized ammonia as nitrogen. The zone of mixing is within the Truckee River reach directly below Steamboat Creek and was established such that the standards for these water quality parameters were relaxed within the zone of mixing, while not violating either the aesthetic or acute toxicity water quality values within the zone, or the Truckee River standards at the boundaries of the zone. Since the upstream Truckee River provided the highest quality water in the analysis, river low flow rates were selected for both summer, 230 cubic feet per second (cfs), and winter, 480 cfs, conditions to minimize the dilution available in the zone of mixing. Based on two dye tests, complete mixing, at a discharge of 44.0 MGD, occurs just downstream of the third major bend in the river below Steamboat Creek, at a point approximately 3,800 feet downstream of Steamboat Creek. A zone of passage was established to allow passage of aquatic life in accordance with NAC 445A.299.

The Permittee has received Division approval of the 90% Design Drawings and specifications for an upgrade to expand the treatment capacity to 51.2 MGD. Expansion activities are being implemented to meet planned treatment demand for the region. In addition, existing process units and ancillary equipment

are being retrofitted or upgraded to improve the treatment plant efficiency and to extend the life of the units. Major facilities include: construction of additional primary and secondary sedimentation tanks; a new primary sludge screening facility; an additional aeration tank; a new acid-phase digester with control building; a new ferric chloride and polymer facility; and improvements to the odor control system. Additional project elements include: retrofit of existing primary sludge pumps with hose pumps; retrofit of existing aeration tanks with fine bubble diffusers; upgrade of existing blowers to single-stage motor driven blowers; and upgrades to the plant electrical and instrumentation system.

Reuse of treated effluent/reclaimed water and biosolids from this facility are authorized under separate State permits. The pretreatment program is authorized through the US Environmental Protection Agency.

Receiving Water Characteristics: The Truckee River at the Lockwood Bridge, NAC 445A.187, standards apply to this stream segment. The listed beneficial uses of this segment include aquatic life, water contact recreation, wildlife propagation, irrigation, stock watering, municipal or domestic supply, industrial supply, and non-contact recreation.

In 2000, the Truckee River at East McCarran, upstream of the Steamboat Creek confluence, met the NAC 445A.187, Truckee River at Lockwood Bridge water quality standards for beneficial uses that were monitored, temperature, pH, dissolved oxygen, total nitrogen, nitrate, nitrite, ammonia, and total dissolved solids (TDS). In 2000, the Truckee River met the requirements to maintain existing higher quality for pH and TDS at this location. In 2000, the river met all of these standards at Lockwood Bridge, downstream of Steamboat Creek.

Data from 2001 was not compared because the nitrification towers and the denitrification fluidized beds were temporarily shutdown during construction to increase the wastewater treatment capacity and to upgrade some of the treatment processes. This shutdown was scheduled during the spring to take advantage of the high flows and low water temperatures.

Flow: At the time of permit application, the annual average influent flow was 32.93 MGD and the annual average effluent flow was 30.16 MGD with a highest monthly average effluent flow of 32.16 MGD. The facility has an existing capacity of 44.0 MGD. As stated in the general section of this fact sheet, the Division has approved the 90% Design Drawings and specifications for an expansion to 51.2 MGD. When the expansion is complete, the influent flow limitation will be increased from 44.0 MGD to 51.2 MGD without further public notice.

Quantities: Section 303 (d) (1) (C) of the Clean Water Act requires that Total Maximum Daily Loads (TMDLs) shall be established at a level necessary to implement the applicable water quality standards. In February 1994, the Final Truckee River Total Maximum Daily Loads and Waste Load Allocations was adopted by the State. The details of the document will not be repeated in this fact sheet. The Truckee River TMDL compliance point was set at Lockwood because the majority of controllable sources are upstream from this point. The April 1998 303 (d) List for the Truckee River Basin, East McCarran to Lockwood, lists existing TMDLs as total nitrogen (TN), total phosphorus (TP), and total dissolved solids (TDS) with the footnote "Planned flow augmentation, nonpoint source reduction, river restoration and water quality model enhancement may result in a revision to the existing TMDLs."

The Truckee River TN TMDL is 1,000 pounds per day (lbs/day). The Permittee's waste load allocation (WLA) is:

500 lbs/day	annual average
500 lbs/day	30-day average (May through October)

The Permittee is conducting a study to investigate the biological availability of the dissolved organic nitrogen (DON) compounds that are discharged to the river. The project objective is to determine how much of the Permittee's effluent DON pool is refractory and not available for biological uptake under conditions typical of the Truckee River between the facility and Pyramid Lake. The Permittee's existing TN WLA does not distinguish between the readily bioavailable inorganic nitrogen species and DON that may be less bioavailable. This study is intended to provide a scientific basis to modify the Permittee's TN WLA.

The Truckee River TP TMDL is 214 lbs/day. The Permittee's TP WLA is:

134 lbs/day.

The Truckee River TDS TMDL is 900,528 lbs/day. The Permittee's TDS WLA is:

120,168 lbs/day annual average.

The 90,126 lb/day TDS WLA for effluent flows less than or equal to 30 MGD has been eliminated because the effluent flow currently exceeds 30 MGD. The annual average shall be calculated as the average of the 12 monthly average loads.

Proposed Effluent Limitations: During the period beginning on the effective date of this permit and lasting until the permit expires, the Permittee is authorized to discharge from a single pipe located on the northeast side of the discharge structure, Outfall 001, into Steamboat Creek and subsequently the Truckee River.

- a. Samples taken in compliance with the monitoring requirements specified below shall be taken at:
 - i. The end of the discharge pipe prior to entering Steamboat Creek;
 - ii. The influent headworks weirs;
 - iii. The downstream boundary of the zone of mixing, approximately 3,800 feet downstream of Steamboat Creek (This sample location may be relocated due to Part I.A.30.b.); and
 - iv. The East McCarran Bridge.
- b. The discharge shall be limited and monitored by the Permittee as specified below:

Table I.A.1

PARAMETERS	EFFLUENT DISCHARGE LIMITATIONS						MONITORING REQUIREMENTS		
	30-Day Average			Daily Maximum			Sample Location ¹³	Measurement Frequency	Sample Type
	mg/L	Kg/day	lbs/day	mg/L	Kg/day	Lbs/day			
Flow, Influent(MGD)	44.0/51.2			---	---	---	ii.	Continuous	Flow meter
Flow, Effluent (MGD)	Monitor and Report						i.	Continuous	Flow meter
Biochemical Oxygen Demand, 5-day, Inhibited ¹ (mg/L)	Monitor and Report						ii.	3 Times/Week	Composite
Biochemical Oxygen Demand, 5-day, Inhibited ²	10	1,664/ 1,937	3,670/ 4,270	15	2,497/ 2,905	5,504/ 6,405	i.	3 Times/Week	Composite
CONTINUED ON NEXT PAGE ?									

PARAMETERS	EFFLUENT DISCHARGE LIMITATIONS						MONITORING REQUIREMENTS		
	30-Day Average			Daily Maximum			Sample	Measurement	Sample
	mg/L	Kg/day	lbs/day	mg/L	Kg/day	Lbs/day	Location ¹³	Frequency	Type
Biochemical Oxygen Demand, 5-day, Uninhibited ¹ (mg/L)	Monitor and Report						ii.	3 Times/Week	Composite
Biochemical Oxygen Demand, 5-day, Uninhibited ²	20	3,329/ 3,874	7,339/ 8,540	30	4,994/ 5,811	11,009/ 12,810	i.	3 Times/Week	Composite
Total Suspended Solids (mg/L)	Monitor and Report						ii.	3 Times/Week	Composite
Total Suspended Solids	20	3,329/ 3,874	7,339/ 8,540	30	4,994/ 5,811	11,009/ 12,810	i.	3 Times/Week	Composite
Total Dissolved Solids	---	54,508 ³	120,168 ³	500	---	---	i.	Weekly	Discrete
Total Nitrogen Species –N	---	227 ³	500 ³	---	---	---	i.	Weekly	Composite
Kjeldahl Nitrogen –N (filtered) (mg/L)	Monitor and Report						i.	Weekly	Composite
Nitrate – N	---	---	---	2.0	---	---	i.	Daily	Composite
Un-ionized Ammonia –N	---	---	---	0.02	---	---	iii.	Weekly	Calculated
Un-ionized Ammonia –N				0.20			i.	Daily	Calculated
Dissolved Organic Nitrogen –N (mg/L)	Monitor and Report ¹²						i.	Weekly	Composite
Total Phosphorus –P	0.40	61 ³	134 ³	---	---	---	i.	Daily	Composite
Total Phosphates –P (filtered) (mg/L)	Monitor and Report						i.	Weekly	Composite
Dissolved Organic Carbon – C (mg/L)	Monitor and Report						i.	Weekly	Composite
Alkalinity as CaCO ₃ (mg/L)	Monitor and Report						iv.	Weekly	Discrete
Hardness as CaCO ₃ (mg/L)	Monitor and Report						iv.	Quarterly	Discrete
Total Chlorine Residual	---	---	---	0.10 ⁴	---	---	i.	Daily	Discrete
Temperature ⁵ (°C)	Monitor and Report						iv.	Weekly	Discrete
Temperature ⁶ (°C)	---	---	---	? T<2	---	---	iii.	Weekly	Discrete
Fecal Coliform (MPN/100 ml)	200 ⁷			400 ⁸			i.	Daily	Composite
Escherichia coli (MPN/100 ml)	Monitor and Report						i.	Monthly	Composite
Dissolved Oxygen (mg/L)	---	---	---	= 5.0	---	---	i.	Daily	Discrete
pH (standard units)	---			6.5 = pH = 8.5 ⁴			i.	Daily	Discrete
Priority Pollutants Full Scan ⁹ (mg/L)	---	---	---	---	---	---	i.	Annually	Composite
Present Priority Pollutants ¹⁰ (mg/L)	---	---	---	---	---	---	i.	Quarterly	Composite

Notes:

1. These analyses shall be taken from the same composite.
 2. These analyses shall be taken from the same composite.
 3. See Part I.A.3.
 4. Except as allowed in Part I.A.9.
 5. The background river water alkalinity, hardness, and temperature shall be monitored at the East McCarran Bridge.
 6. The compliance river water temperature shall be monitored at the boundary of the Division approved zone of mixing.
 7. The fecal coliform bacterial level may not exceed a geometric mean of 200 MPN per 100 ml.
 8. A maximum of 10% of the total fecal coliform samples may exceed 400 MPN per 100 ml during any 30-day period without permit violation.
 9. Full Scan Priority Pollutants listed in Attachment A.
 10. Only those Priority Pollutants exhibiting influent concentrations in the annual full scan must be monitored on a quarterly basis.
 11. Exceedance of any of the NAC 445A.144 standards for toxic materials applicable to designated waters.
 12. If the Permittee decides not to pursue the removal of the DON from the WLA, the Permittee may stop monitoring the DON upon written notification to the Division.
 13. See Part I.A.1.a. for locations.
- mg/L: Milligrams per liter.
lbs/day: Pounds per day.

Kg/day: Kilograms per day.
MGD: Million gallons per day.
MPN/100ml: Most probable number per 100 milliliters.
-N: As nitrogen.
-P: As phosphorus.
-C: As carbon.
WLA: Waste load allocation per Part I.A.3.
CaCO₃: Calcium carbonate.
°T: Change in temperature.
°C: Degrees Celsius.
DON: Dissolved organic nitrogen.

Biosolids shall be sampled at the discharge of the cake pumps. The biosolids shall be limited and monitored by the Permittee as specified below:

Table I.A.2

CHARACTERISTICS	LIMITATIONS		MONITORING REQUIREMENTS	
	Pollutant Concentrations	Ceiling Concentrations	Measurement Frequency	Sample Type
Arsenic (mg/Kg)	41	75	1/60 days	Representative ¹
Cadmium (mg/Kg)	39	85	1/60 days	Representative ¹
Chromium (mg/Kg)	1200	3000	1/60 days	Representative ¹
Copper (mg/Kg)	1500	4300	1/60 days	Representative ¹
Lead (mg/Kg)	300	840	1/60 days	Representative ¹
Mercury (mg/Kg)	17	57	1/60 days	Representative ¹
Molybdenum (mg/Kg)	---	75	1/60 days	Representative ¹
Nickel (mg/Kg)	420	420	1/60 days	Representative ¹
Selenium (mg/Kg)	36	100	1/60 days	Representative ¹
Zinc (mg/Kg)	2800	7500	1/60 days	Representative ¹
Organic Nitrogen –N (mg/Kg)	Monitor and Report		1/60 days	Representative ¹
Ammonia –N (mg/Kg)	Monitor and Report		1/60 days	Representative ¹
Nitrate –N (mg/Kg)	Monitor and Report		1/60 days	Representative ¹
Total Nitrogen –N (mg/Kg)	Monitor and Report		1/60 days	Representative ¹
Total Phosphorus –P (mg/Kg)	Monitor and Report		1/60 days	Representative ¹
Potassium –K (mg/Kg)	Monitor and Report		1/60 days	Representative ¹
Pathogen Reduction	15 days at 35 to 60° C		1/60 days	Operations Log ²
Vector Attractant Reduction	38% Volatile Solids Reduction		1/60 days	Calculated ³

NOTES:

1. A representative sample consists of a dry weight grab sample.
 2. Provide brief information from the Operations log as support.
 3. Per “Environmental Regulations and Technology--Control of Pathogens and Vector Attraction in Sewage Sludge” EPA-625/R-92/013.
- mg/Kg: Milligrams per kilogram, dry-weight basis.
-N: As nitrogen.
-P: As phosphorus.
-K: As potassium.
°C: Degrees Celsius.

Stream Monitoring:

- a. The following stations and parameters shall be monitored on a monthly basis using time-of-travel equations to estimate collection times at each site. Samples shall be collected from the centroid of flow using a vertically integrating sampler.

<u>Stations</u>	<u>Parameters</u>
East McCarran Bridge	Temperature (°C)
North Truckee Drain	pH (SU)
Steamboat Creek	Dissolved Oxygen (mg/L)
Lockwood	Ortho Phosphorus -P (filtered) (mg/L)
Tracy/Clark	Total Phosphorus -P (filtered) (mg/L)
Derby Dam	Total Phosphorus -P (unfiltered) (mg/L)
Painted Rock	Nitrate -N (mg/L)
Wadsworth	Nitrite -N (mg/L)
Nixon	Ammonia -N (mg/L)
	Kjeldahl Nitrogen -N (filtered) (mg/L)
	Kjeldahl Nitrogen -N (unfiltered) (mg/L)
	Total Dissolved Solids (mg/L)
	Total Alkalinity (mg/L)
	Electrical Conductivity (µmhos/cm)
	Dissolved Organic Carbon (mg/L)
USGS Truckee River Gaging Stations:	Flow (cfs)
at Farad	10346000 – data to be obtained from USGS
at East McCarran Bridge	10348200
at Tracy	10350400
below Derby Dam	10351600
near Nixon	10351700

- b. Continuous water quality analyzers shall be placed at two locations downstream of the plant (as close to the Tracy and Nixon USGS Gaging Stations, as possible) from April through November for analysis of the parameters listed above, Part a. The analyzers shall be removed from operation when flows exceed 500 cubic feet per second at Vista.
- c. Benthic macroinvertebrates shall be collected, enumerated and identified to the taxonomic levels specified in Attachment B of the permit at East McCarran Bridge, Lockwood, Tracy, and Wadsworth on a quarterly basis. Data shall be reported quarterly in a spreadsheet format and entered in the Ecological Data Application System database. The frequency of benthic macroinvertebrate collection, enumeration, and identification and the taxonomic levels specified in Attachment B may be adjusted as a minor modification.

Schedule of Compliance and Special Conditions: The Permittee shall implement and comply with the provisions of the schedule of compliance after approval by the Administrator, including in said implementation and compliance, any additions or modifications that the Administrator may make in approving the schedule of compliance.

- a. The Permittee shall achieve compliance with the effluent limitations upon issuance of the permit.

- b. At least one hundred eighty (180) days prior to the projected date of the effluent discharge exceeding a 30-day average flow of 44.0 MGD, the Permittee shall submit to the Division an application for a zone of mixing for a 30-day average flow of 51.2 MGD.
- c. Within ninety (90) days of the permit effective date, the Permittee shall submit to the Division a revised O & M Manual.
- d. Within ninety (90) days of the completion of the expansion to a capacity of 51.2 MGD, 30-day average flow, the Permittee shall submit to the Division a revised O & M Manual.
- e. By February 19, 2007, the Permittee shall submit to the Division a detailed evaluation of the pretreatment program limits to determine if the limits are adequate to achieve the biosolids pollutant concentration limits
- f. The Permittee shall submit reports illustrating compliance or noncompliance with specified compliance dates within 14 days of any respective, scheduled compliance date.

There are no special conditions.

Rationale for Permit Requirements: The Permittee is proposing to continue to discharge treated domestic and industrial wastewater that meets all Truckee River at Lockwood Bridge, Standards of Water Quality, NAC 445A.187, at the treatment plant outfall (001) except for un-ionized ammonia and temperature. The applicable temperature standard will be achieved at the downgradient boundary of the zone of mixing. Monitoring is required to assess the level of treatment being provided and to determine when design capacity is being approached. The basic limits for secondary treatment are included.

Flow: The influent flow rate limitation is based on the design capacity of the Truckee Meadows Water Reclamation Facility. During the 5-year term of the permit, the facility capacity will be expanded from 44.0 MGD to 51.2 MGD.

Effluent flow is monitored to calculate the mass of TDS, TN, and TP discharged to the river for TMDL compliance. The mass of BOD₅ and TSS discharged are also monitored.

Biochemical Oxygen Demand, 5-day: The uninhibited effluent BOD₅ limits of 20 mg/L and 30 mg/L for the 30-day average and the daily maximum, respectively, are the standards for protection from degradation. The State requires any discharge to waters of the State to achieve a minimum of secondary treatment as nationally defined with the exception that the maximum limitation is to be met as a daily maximum rather than a 7-day average.

When a wastewater is nitrified, the inhibited BOD₅, carbonaceous biochemical oxygen demand (CBOD₅), more accurately reflects the amount of oxygen utilized for the biochemical degradation of organic material in the effluent. Because the nitrogenous-based BOD₅ is not measured in the CBOD₅ analysis, the effluent CBOD₅ permit limitation must be reduced. The inhibited effluent BOD₅ limits of 10 mg/L and 20 mg/L for the 30-day average and the daily maximum, respectively, were retained from the previous permit.

The influent inhibited and uninhibited BOD₅ concentrations are monitored to determine the plant's treatment efficiency. The plant has been designed to remove 99% of the influent BOD₅. The annual average influent BOD₅ is 162 mg/L.

There is no NAC 445A.187 standard for BOD₅ or CBOD₅.

The annual average effluent BOD₅ concentration in the permit application was 5 mg/L. CBOD₅ was not

reported.

Total Suspended Solids: The effluent TSS limitations are based on the design performance standards of the facility. Based on the permit application, the annual average effluent TSS concentration is 4 mg/L with a lowest monthly average of 2 mg/L and a highest monthly average of 7 mg/L. The mass of the TSS discharged limitation has been increased due to the increased effluent flow while maintaining the effluent TSS concentration limitation.

The influent TSS concentration is monitored to determine the plant's treatment efficiency. The plant has been designed to remove 95% of the influent TSS.

The annual average effluent TSS concentration reported in the permit application was 4 mg/L.

Total Dissolved Solids: The TDS limitations are based on the Truckee River at Lockwood Bridge, Standards of Water Quality, NAC 445A.187, water quality standards for beneficial uses, and the Permittee's WLA, as discussed in the Quantities section of this fact sheet. The daily maximum, 500 mg/L, is the annual average limitation with municipal or domestic supply as the most restrictive use. The mass of the TDS discharged limitation has been increased due to the increased effluent flow while maintaining the effluent TDS concentration limitation. The annual average effluent TDS concentration in the permit application was 371 mg/L.

Total Nitrogen Species as N: The TN species as nitrogen limitation is based on the Permittee's WLA, as discussed in the Quantities section of this fact sheet. The Truckee River at Lockwood Bridge, Standards of Water Quality, NAC 445A.187, water quality standards for beneficial uses are not consistent with a TN maximum single value of 1.2 mg/L and a nitrate maximum single value of 2.0 mg/L, therefore, the only TN limitation included in the permit is the WLA.

Kjeldahl Nitrogen as N: The Kjeldahl nitrogen (KN) as nitrogen, filtered, is used to quantify the dissolved organic nitrogen, less ammonia, in the effluent.

The annual average effluent KN concentration in the permit application was 2.63 mg/L.

Nitrate as N: The nitrate as nitrogen limitation is based on the Truckee River at Lockwood Bridge, Standards of Water Quality, NAC 445A.187. The daily maximum, 2.0 mg/L, is the nitrate single value limitation for aquatic life, the most restrictive beneficial use. The annual average effluent nitrate concentration in the permit application was 0.138 mg/L.

Un-ionized Ammonia as N: The un-ionized ammonia as nitrogen limitation is based on the Truckee River at Lockwood Bridge, Standards of Water Quality, NAC 445A.187. The daily maximum, 0.02 mg/L at the downstream boundary of the mixing zone, is the un-ionized ammonia single value limitation for aquatic life, the most restrictive beneficial use. The effluent limitation at the discharge point has been maintained at 0.20 mg/L to provide daily monitoring of the un-ionized ammonia concentration. The annual average effluent ammonia concentration in the permit application was 1.01 mg/L, but with facility upgrades and management measures, the results of all first half of 2002 un-ionized ammonia calculations have been less than 0.001 mg/L.

Dissolved Organic Nitrogen as N: The DON as nitrogen is monitored weekly without limitations because the Permittee is conducting a study to determine the effect of DON on their WLA. If the Permittee decides not to pursue the removal of the DON from the WLA, the Permittee may stop monitoring the DON as an effluent parameter without further public notice.

Total Phosphorus as P: The TP as phosphorus limitation is based on the Truckee River at Lockwood

Bridge, Standards of Water Quality, NAC 445A.187, water quality standards for beneficial uses, with aquatic life and water contact recreation as the most restrictive beneficial uses, and the Permittee's WLA, as discussed in the Quantities section of this fact sheet. The annual average effluent TP concentration in the permit application was 0.29 mg/L.

Total Phosphates as P: The monitoring of total phosphates as phosphorus has been retained from the previous permit but the 30-day average and WLA limitations have been eliminated to be consistent with NAC 445A.187 and the Truckee River TMDL that both apply to total phosphorus not total phosphates.

Dissolved Organic Carbon: Dissolved organic carbon (DOC) is used as a further measure of the effluent's dissolved pollutional characteristics.

The annual average effluent total organic carbon concentration in the permit application was 7.4 mg/L; the application does not request DOC data.

Alkalinity as CaCO₃: Weekly monitoring without effluent limitations of the alkalinity as calcium carbonate has been carried over from the previous permit. The Truckee River at Lockwood Bridge, Standards of Water Quality, NAC 445A.187, include a water quality standard for beneficial uses of less than 25% change from natural conditions that has not been incorporated into the permit.

Hardness as CaCO₃: Hardness as calcium carbonate has been added to the permit monitored parameters because the aquatic life standards, NAC 445A.144, for cadmium, chromium, copper, lead, silver, and zinc are a function of the hardness. Four of these six metals are listed as present in the Permittee's discharge.

Total Chlorine Residual: The treated effluent is disinfected with chlorine, then de-chlorinated with sodium bisulfite. Total chlorine residual is monitored to verify that the free chlorine has been removed to a level below the analytical detection limit. The total chlorine residual requirement of 0.05 mg/L has been changed to 0.10 mg/L at the point of discharge because the reported detection level for chlorine is 0.10 mg/L. Therefore, compliance with the 0.05 mg/L limitation cannot be demonstrated through the laboratory analyses.

Temperature: The temperature limitation on the discharge is based on the Truckee River at Lockwood Bridge, Standards of Water Quality, NAC 445A.187, with aquatic life as the most restrictive beneficial use. The temperature is to be monitored upstream of the confluence of Steamboat Creek and the Truckee River at East McCarran and at a point approximately 3,800 feet downstream of the confluence, the downstream boundary of the mixing zone for a discharge of 40.0 MGD.

The winter average effluent temperature in the permit application was 17.2 °C. The summer average effluent temperature concentration in the permit application was 22.1 °C.

Fecal Coliform: The fecal coliform limitation is based on the Truckee River at Lockwood Bridge, Standards of Water Quality, NAC 445A.187, water quality standards for beneficial uses with water contact recreation as the most restrictive beneficial use.

Escherichia Coli: The Truckee River does not currently have an E. coli water quality standard, therefore, no E. coli limitation has been included in the permit. When the Division revises the Truckee River standards an E. coli water quality standard will be established and the E. coli standard will be incorporated into the permit as a minor modification.

Dissolved Oxygen: The dissolved oxygen limitation is based on the Truckee River at Lockwood Bridge, Standards of Water Quality, NAC 445A.187, with aquatic life as the most restrictive beneficial use. The single value limitation for April through October is 5.0 mg/L. This value has been applied to the discharge

year round. The annual average effluent dissolved oxygen concentration reported in the permit application was 6.9 mg/L.

pH: The 30-day average pH limitation is based on the Truckee River at Lockwood Bridge, Standards of Water Quality, NAC 445A.187, with water contact recreation and wildlife propagation as the most restrictive beneficial uses. In the permit renewal application, the Permittee listed a lowest monthly average pH of 7.3 SU and a highest monthly average of 7.6 SU. Although both the lowest and the highest monthly averages are within the NAC 445A.187 pH range of 7.1 to 8.5 requirement to maintain existing higher quality, the Division has determined that it would be preferable to exceed the pH RMHQ than to add salts/caustics to adjust the pH of a discharge to a waterway with a TDS TMDL.

Priority Pollutants, Full Scan: Annual influent and effluent analyses are required for the Attachment A list of priority pollutants, as required by the federal pretreatment regulations. There will be no effluent limitations included in the permit for the toxic constituents of Attachment A – Priority Pollutants but the Permittee will continue to monitor these pollutants using laboratory methods that obtain quantified data at or below one-half the water quality standards with the exception of mercury.

Present Priority Pollutants: Influent and effluent samples must be analyzed quarterly for those pollutants detected in the annual influent full scan, as required by the federal pretreatment regulations.

Biosolids: Biosolids are monitored by the Permittee to verify that the biosolids can be land applied and the nutrient content of the biosolids. All biosolids to be land applied must meet the ceiling concentrations for each of the ten metals. Biosolids applied to the land must also meet pollutant concentration limits, cumulative pollutant loading rate limits, or annual pollutant loading rate limits for these same ten metals. Nutrient concentrations are monitored to determine the agronomic application rate. 40 CFR Part 503 requires pathogen and vector attraction reduction for land applied biosolids.

The Permittee is responsible for providing biosolids land appliers the required characterization of the biosolids and for preventing the land application of biosolids that exceed the ceiling concentrations. The land appliers are permitted separately and are responsible for land application of biosolids at rates that do not exceed the agronomic rates, based on data provided by the Permittee.

Treatment Efficiency – Part I.A.2: The minimum design BOD₅, CBOD₅, and TSS removal efficiency for a secondary treatment plant is 85%. This advanced treatment plant is designed to remove 99% of the BOD₅ and 95% of the TSS from the influent.

Waste Load Allocations - Part I.A.3: The waste load allocations section allows discharge flexibility among the Permittee, the City of Sparks – Sparks Marina Park, NV0022918, and Vista Canyon Group LLC, NV0020893. The individual permittees have first rights to their assigned individual WLA. Any remaining allocation may be shared by the dischargers. No discharger shall be penalized for the WLA violations of the other discharges. Similar trading language has been incorporated into the Marina Park and Vista Canyon permits.

Stream Monitoring – Part I.A.4: The stream monitoring section defines the off-site stream monitoring plan.

Water Quality Trading – Part I.A.5: The Division may modify the permit, without further public notice, to include specific water quality trading, or offset, projects based upon review of the results of scientific studies. Water quality trading entails the reduction in a pollutant load through implementation of a water quality management project that is credited towards the Permittee's WLA, thereby increasing the Permittee's allowable discharge load for a specific pollutant. Potential water quality trading opportunities include, but are not limited to, water augmentation, river restoration, septic system conversion, and stormwater management practices. These potential water quality management projects will be evaluated as

to their effectiveness through watershed/water quality modeling simulations, field pilot studies and on-going water quality monitoring. Based on the results of the model simulations and pilot projects, the permit may be modified to incorporate the Permittee's increased WLA(s).

A three-phased approach will be taken in implementing a water quality trading program and in incorporating specific trades, or offsets, into the permit:

- a. Phase I involves the inclusion of this permit reopener clause allowing for consideration of potential water quality trades on a case-by-case basis without reopening other provisions of the permit.
- b. Phase II involves the development of proposals to evaluate demonstration projects to substantiate the benefits of specific water quality trading project proposals for presentation to the Division by the Permittee. Components of the proposal will include: the demonstration project description, calculated pollutant reductions, an assessment of potential water quality benefits, and an implementation plan. Upon concurrence by the Division, the Permittee will proceed with the implementation plan, including conducting watershed and water quality model simulations to evaluate the water quality impacts of the proposed project under various receiving water conditions. The proposal will include monitoring program requirements to demonstrate the effectiveness of the proposed trades and determinations of standards of adequacy. Upon agreement of the proposal by the Division and the Permittee, the demonstration project shall be implemented and results monitored. A Water Quality Management Demonstration Project Report (Report) summarizing the findings, conclusions and recommendations of the demonstration project analysis must be submitted to the Division. Based on the conclusions reached in the Report, and with the consensus of the Division, a decision will be made on whether to proceed with full implementation of the project.

Proof of non-point source reductions implemented subsequent to the effective date of the permit may also be included in project proposals.

- c. Phase III involves the full implementation of the water quality management project, and the development of the final trade ratio. The full implementation of the water quality management scenarios will also include consideration of the timing of adoption of appropriate increases in the applicable WLAs. This is anticipated to include the development of a "phase-in" schedule for credits and the development of applicable monitoring and enforcement provisions. The "phase-in" schedule for credits will be developed to provide for time to implement the project and to demonstrate the anticipated water quality benefits.

Seasonal Discharge – Part I.A.6: During the term of this permit, the Division is scheduled to review and adjust, if appropriate, the Truckee River TMDL. A seasonal WLA is one of the TMDL modifications the Permittee has requested that the Division consider. A TMDL revision will require public input, therefore, it will not be necessary to obtain public comment regarding the incorporation of the TMDL revision into the individual permits.

Dissolved Organic Nitrogen – Part I.A.7: During the term of this permit, the Division is scheduled to review and adjust, if appropriate, the Truckee River TMDL. The exclusion of all or a portion of the DON from the Permittee's TN waste load allocation is one of the TMDL modifications the Permittee has requested that the Division consider. A TMDL revision will require public input, therefore, it will not be necessary to obtain public comment regarding the incorporation of the TMDL revision into the individual permits.

Chlorine Residual and pH Effluent – Part I.A.9: The permit allows short-term exceedances to give the Permittee time to respond to values beyond the discharge limitations. The guidelines cited in 40 CFR Part 401.17 for pH will be followed in interpreting compliance with chlorine residual and pH limits for facilities

that monitor more frequently than is required in the discharge permit.

Zone of Passage – Part LA 22: Per NAC 445A.299, stream-mixing zones in which the standards for water quality may be exceeded must be designed to ensure that a zone of passage is maintained. The allowable stream-mixing zone must be oriented in the stream in a manner which permits the greatest effectiveness of the zone of passage.

Whole Effluent Toxicity – Part LA 30: WET protects the receiving water quality from the aggregate toxic effect of a mixture of pollutants in the effluent. WET tests measure the degrees of response of exposed aquatic test organisms to an effluent. This permit requires both acute and chronic toxicity testing.

Pretreatment of Industrial Wastewaters – Part LA 31: This section requires the Permittee to comply with an approved pretreatment program. This program requires the Permittee to cause industrial users to be subject to Federal Categorical Standards, 40 CFR Part 403.

Procedures for Public Comment: The Notice of the Division's intent to reissue a permit authorizing the facility to discharge to surface waters of the State of Nevada subject to the conditions contained within the permit, is being sent to the **Reno Gazette-Journal** for publication. The notice is being mailed to interested persons on our mailing list. Anyone wishing to comment on the proposed permit can do so in writing until 5:00 P.M. March 7, 2003, a period of 30 days following the date of the public notice. The comment period can be extended at the discretion of the Administrator.

A public hearing on the proposed determination can be requested by the applicant, any affected State, any affected interstate agency, the Regional Administrator of EPA Region IX or any interested agency, person or group of persons. The request must be filed within the comment period and must indicate the interest of the person filing the request and the reasons why a hearing is warranted. Any public hearing determined by the Administrator to be held must be conducted in the geographical area of the proposed discharge or any other area the Administrator determined to be appropriate. All public hearings must be conducted to accordance with NAC 445A.238.

The final determination of the Administrator may be appealed to the State Environmental Commission pursuant to NRS 445A.238.

Proposed Determination: The Division has made the tentative determination to issue the proposed permit for a five (5) year period.

Prepared by: Bruce Holmgren
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